



**▲ pact<sup>®</sup> DM**  
DOUBLE MOBILITY PRESS FIT CUP

EVOLVING OUR HERITAGE, MEETING YOUR NEEDS



**Surgical Technique**

Joint

Spine

Sports Med

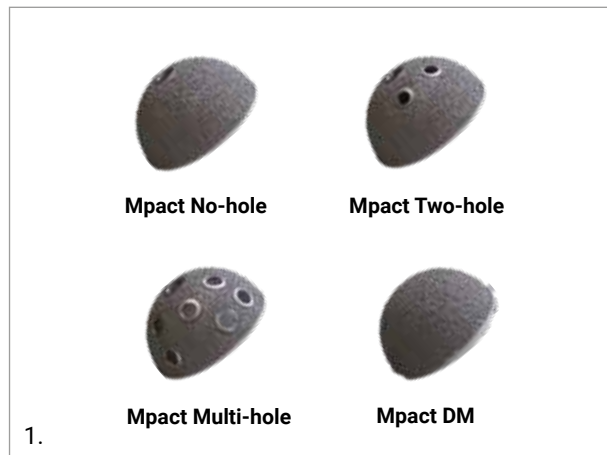


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## 1. INTRODUCTION

The Mpact DM is part of the Mpact Acetabular System and offers different shell and liners options, ranging from primary to complex revision solutions.



This document describes the Surgical Technique for the Mpact DM acetabular shell.

The Mpact DM is a hemispherical dual mobility cup, which is used with Highcross UHMWPE liners. The MectaGrip Ti coating provides a high friction and scratch-fit feel that improves the initial stability. Additionally, the high porosity allows for bone ingrowth, thus providing secondary fixation.

For more information regarding other Mpact Acetabular System shells please see the dedicated Surgical Technique. In this surgical technique, the MasterLoc stem is used as an example. For more details about MasterLoc, please see the dedicated surgical technique.

Carefully read the instructions for use. Should you have any questions concerning product compatibility contact your local Medacta representative.

### 1.1 INDICATIONS OF USE

The Mpact Double Mobility prosthesis is designed for use in total hip arthroplasty to provide increased patient mobility and reduced pain by replacing the damaged hip joint, in primary or revision surgery.

Total hip arthroplasty is indicated in the following cases:

- Severely painful and/or disabled joint as a result of arthrosis, traumatic arthritis, rheumatoid polyarthritis, or congenital hip dysplasia
- Avascular necrosis of the femoral head
- Acute traumatic fracture of the femoral head or neck
- Failure of previous hip surgery: joint reconstruction, internal fixation, arthrodesis, partial hip arthroplasty, hip resurfacing replacement, or total hip arthroplasty

### 1.2 CONTRAINDICATIONS

Total hip arthroplasty is contraindicated in the following cases:

- Acute, systemic or chronic infection
- Skeletal immaturity
- Severe muscular, neurological, vascular deficiency or other pathologies of the affected limb that may compromise the function of the implant
- Bone condition that may compromise the stability of the implant

Mental or neuromuscular disorders may create an unacceptable risk to the patient and can be a source of post-operative complications.

It is the surgeon's responsibility to ensure that the patient has no known allergy to the materials used.

### 1.3 PRE-OPERATIVE PLANNING

The goal is to determine the optimum acetabular implant size and optimum component orientation. Using the set of X-ray templates to the scale of 1.15:1 (with an X-ray of the same magnification) it will be possible to determine:

- The implant size
- The ideal position of the implant to achieve desired position for optimal coverage

### WARNING

The final implant will be selected intra-operatively, because of possible discrepancies between actual conditions and templating. The choice will be determined by the size of the final reamer used and the trial cup tests.

### 1.4 SURGICAL APPROACH

The surgical approach is at the discretion of the surgeon.

The instrumentation has been developed for standard approach. Specific instrumentation for the anterior approach is available upon request (for further information see the AMIS dedicated surgical technique).

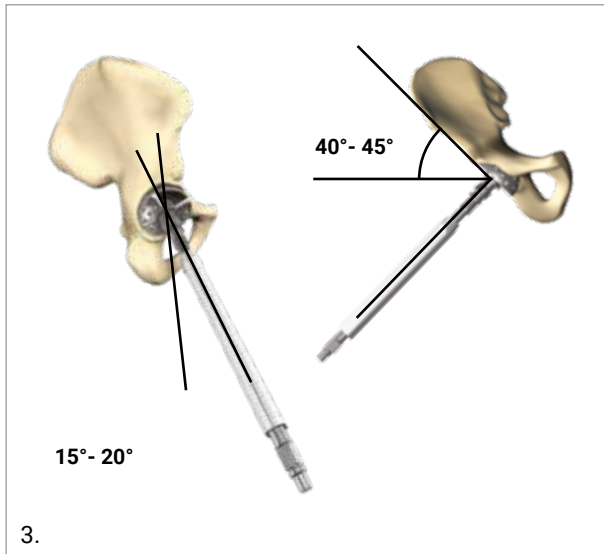
## 2. REAMING

Following the osteotomy of the femoral neck, expose and prepare the acetabular cavity and remove osteophytes.

Start reaming using acetabular reamers.



The ideal reaming axis has an inclination of 40°/45° and an anteversion of 15°/20° (anteversion recommended for posterior approaches).



Start reaming the acetabulum progressively increasing the reamer size until a hemispherical cavity has been obtained and there is presence of bleeding subchondral bone. The preoperative plan can also be used as a reference.

### **WARNING**

During final reaming, avoid changing the reamer axis, in order to prevent making the prepared bed oval, which may affect or prevent the primary seating of the implant.

The size shown on the implant box is the outer diameter of the Mpace DM shell. For example, a box displaying "52mm shell" contains a shell with an outer diameter of 52mm (including Mectagrip coating).

The press-fit should be determined intra-operatively depending on bone quality: the denser the bone, the less press-fit required. In average conditions, an under-reaming of 1 mm should provide an appropriate press-fit of the Mpace DM Acetabular shell.

As a general rule the correct final reamed diameter corresponds to 4 or 6 mm more than the femoral head diameter size. Take care to retain, as much as possible, the bone stock to the level of anterior and posterior columns.

Reamed bone may be used to fill the void between the implant and the acetabulum.

### 3. TRIALS

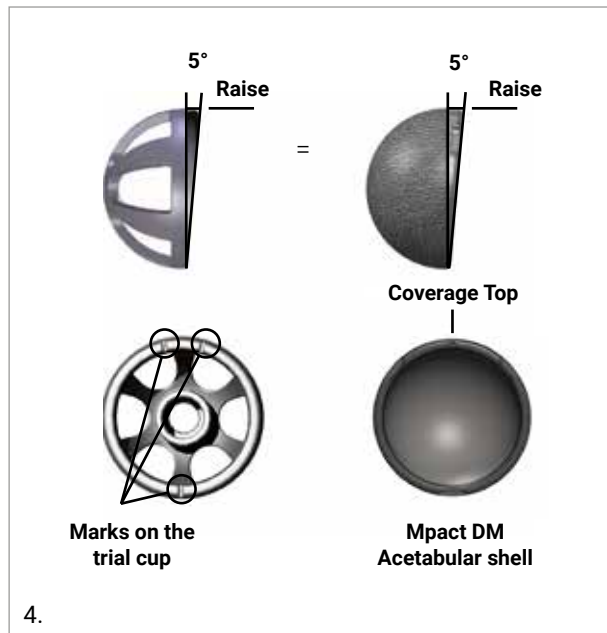
Trial cups can be used to assess shape and orientation of the cavity.

A trial cup of the same diameter of the last reamer (or 1mm smaller in case of odd-size reaming) should be used.

Place the trial cup chosen onto the multifunction handle. (6) Trial cups:

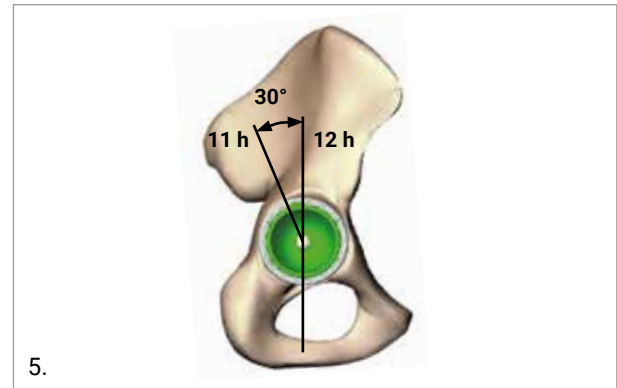
- Are smooth and have the same dimensions as the even reamers to avoid damaging the socket
- Are the exact size specified
- Have several openings to permit direct visualization of the underlying acetabular surface

Both implant and trial cup have a 5° raise. Marks on the trial cup help identify the center of the raise during implantation (Fig. 4).



4.

To benefit from the extra coverage given by this feature, the Mpact DM Acetabular shell should be positioned in the posterior-superior quadrant of the acetabulum, with the three engraved marks pointing approximately 30° posteriorly (the picture represents an example case of right hip). (Fig. 5)



5.

#### CAUTION

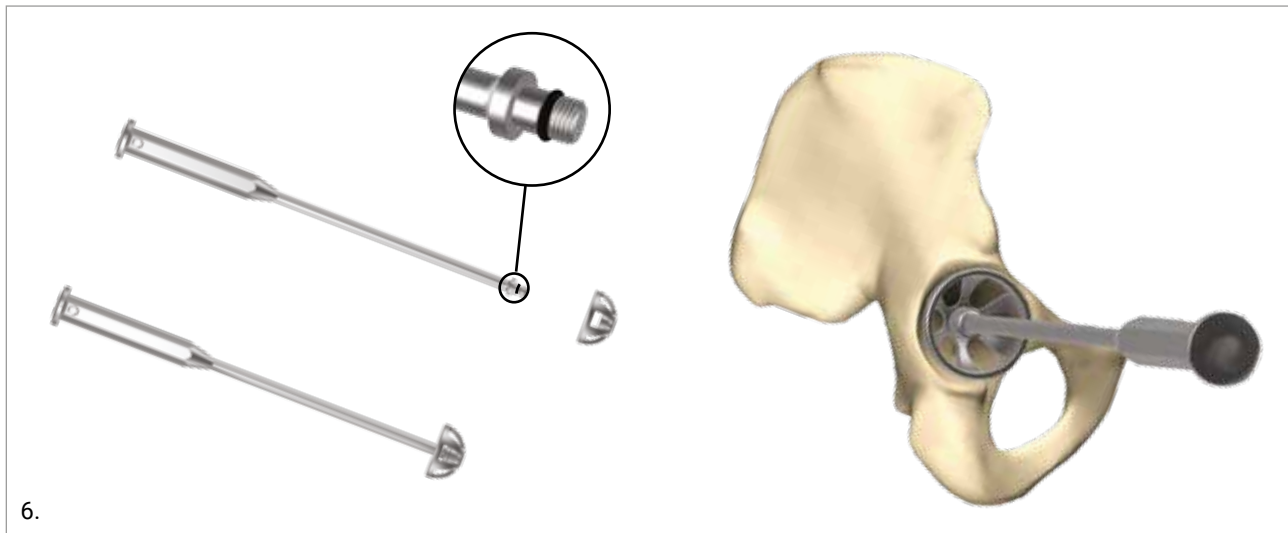
If the acetabular shell is positioned too vertically the joint stability can be compromised even with the Mpact Double Mobility shell. If the acetabular shell is positioned too horizontally, the range of motion (ROM) can be compromised.

#### OPTION

Use electrocautery to mark, on the bone, the center of the raise to help find the same position when implanting the definitive acetabular shell.

#### TRICK

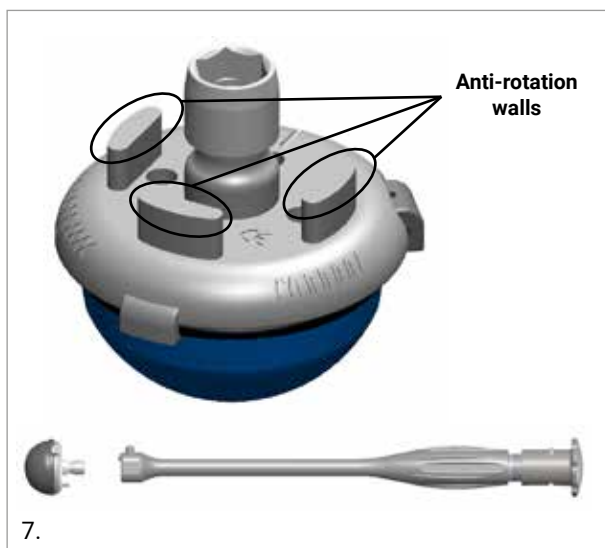
As a general rule, soft bone is suitable for a greater press-fit than dense sclerotic bone. Moreover, the bigger the size of the acetabulum, the greater the suitable press-fit.



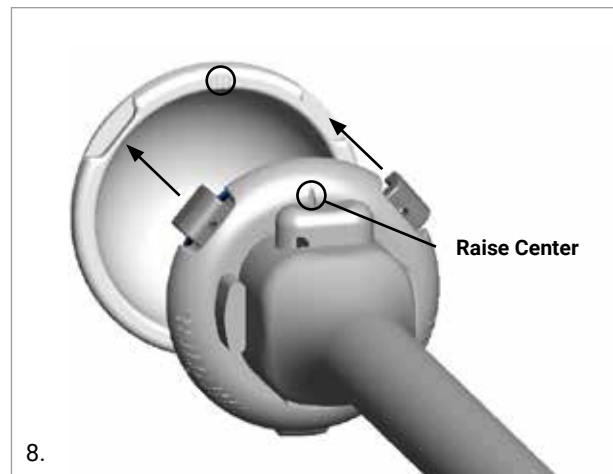
#### 4. IMPACTION OF THE MPACT DM ACETABULAR SHELL

After a satisfactory trial, the final Mpace DM Acetabular shell can be positioned.

**Step 1:** Assemble the impactor plate that corresponds to the letter code of the chosen implant to the impactor handle. Carefully turn the button of the handle towards the side with no anti-rotation walls.



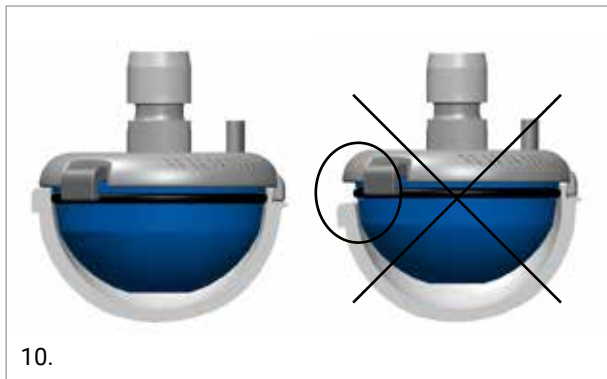
**Step 2:** Identify the slots on the rim of the Mpace DM Acetabular shell and connect the impactor. To ensure the correct position of the impactor plate, take care to align the raise center of the definitive acetabular shell to the impactor plate.



**Step 3:** Screw the anvil end of the impactor to lock the Mpace DM Acetabular shell to the impactor.



Correctly connect the impactor plate with the lip of the Mpace DM Acetabular shell, as shown below.



**Step 4:** Position the implant in the desired angle of orientation in the prepared acetabulum.

**OPTION**

An orientation guide is available to aid in positioning of the Mpace DM Acetabular shell: the orientation guide will be assembled on the dedicated slot of the impactor handle - the angle of the anteversion rods is 20° and the inclination rod is 45°.



**Step 5:** Impact the Mpace DM Acetabular shell using a mallet, until fully seated and stable.



**NOTICE:** do not impact the central rod, always impact the anvil.

**Step 6:** Disassemble the impactor handle from the final Mpace DM Acetabular shell by unscrewing it at the anvil end.



**NOTICE:** during disassembly, stop turning the impactor handle when the rotation resistance increases; this will avoid damaging the impactor plate.

**CAUTION**

After impaction of the Mpace DM Acetabular shell, ensure osteophytes have been removed to avoid any impingement.



## 5. STABILITY TESTS

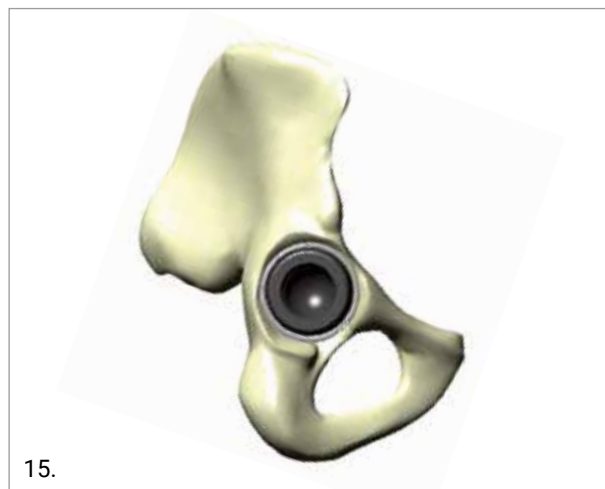
### 5.1 STABILITY TESTS WITH TRIAL DOUBLE MOBILITY LINER

With the Mpace DM Acetabular shell in place, stability tests can be performed using the trial Double Mobility Liner.



Clean the interior surface of the acetabular shell. Position the trial Double Mobility Liner that corresponds to the inner diameter of the shell.

Stability tests are performed after having positioned the trial (broach and trial neck) or final stem and the trial head.



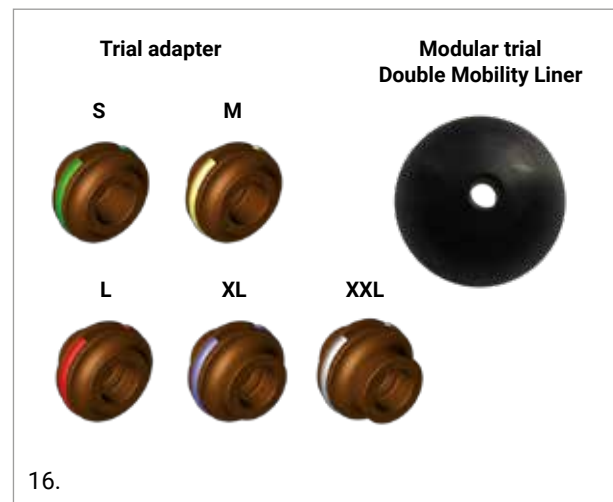
Reduce the hip and test the joint stability and limb length.

### CAUTION

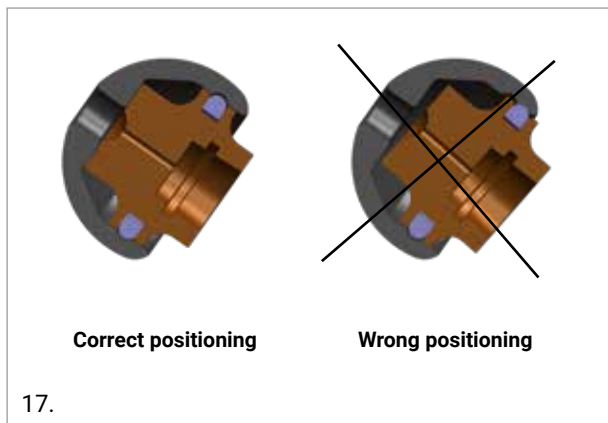
Stability tests must be performed with trial heads and not with final heads.

### 5.2 STABILITY TESTS WITH MODULAR TRIAL DOUBLE MOBILITY LINER

**Step 1:** Choose the trial adapter that corresponds with the head size (S, M, L, XL, XXL) that was selected during pre-operative planning.



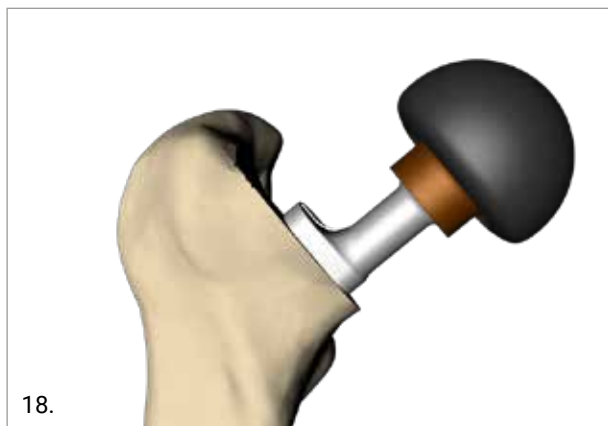
**Step 2:** Assemble the trial adapter with the modular Double Mobility trial Liner, of compatible size with the implanted Mpace DM Acetabular shell. The trial adapter must be inserted straight along the axis of the modular Double Mobility trial Liner. For a complete list of compatible sizes, please refer to the tables in the paragraph "IMPLANT NOMENCLATURE".



**NOTICE:** the side marked with references of the trial adaptor must stay on the external part of the trial mobile liner.

If the trial adapter is free to rotate inside the trial Double Mobility Liner the assembly is correctly coupled. If not, reposition the trial adapter until the right position is reached.

**Step 3:** Place the assembly on the taper of the femoral stem or the trial neck already in place.

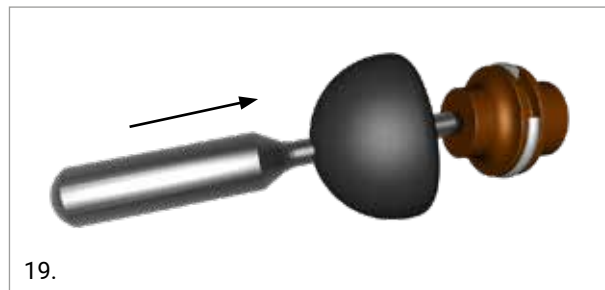


Proceed with the trial reduction.

The mobility, joint stability, range of motion and leg length are tested to confirm the final implant size.

**Step 4:** After the stability tests, remove the assembly from the taper of the femoral stem or the trial neck.

To release the trial adapter from the Double Mobility trial Liner socket you can use the dedicated trial extractor pushing the adapter through the central hole of the trial Double Mobility Liner.



## 6. POSITIONING OF THE FINAL DOUBLE MOBILITY LINER

The external diameter of the Double Mobility Liner will be the same as the internal diameter of the Mpace DM Acetabular shell, following the letter-code; the internal diameter of the liner will be the same as the chosen head.

### TRICK

The color of the trial insert corresponds to the color on the packaging labels of both the Mpace DM Acetabular shell and the Double Mobility Liner. Hence, the color code can be used to help identify the correct final implants.

Before inserting the Double Mobility Liner, thoroughly clean and dry the interior surface of the Mpace DM Acetabular shell, carefully remove any bone debris and tissue residue to avoid damaging the mechanical coupling.

To assemble the final Double Mobility Liner to the desired femoral head, utilize the compression tool with the Double Mobility Liner terminal and the femoral head terminal. Once all components are properly placed, verify the correct head mobility in the liner. The implants are now ready to be impacted onto the femoral component.

### TRICK

In order to facilitate this procedure, place the compression tool vertically on the Back Table and assemble the final dual mobility liner to the desired femoral head.



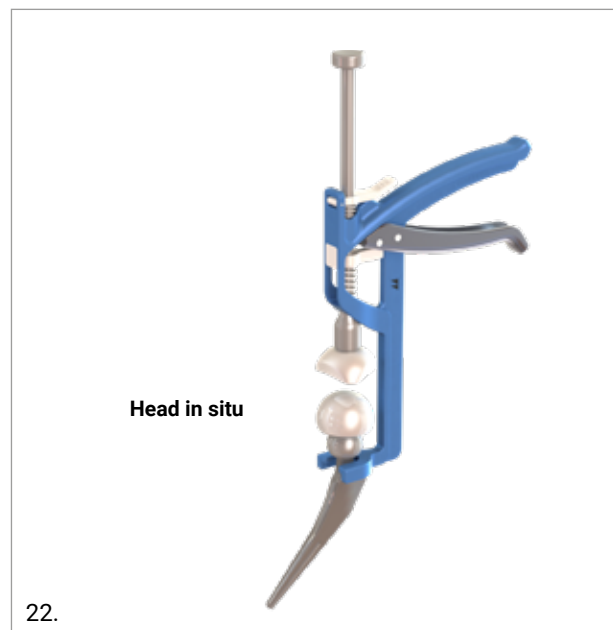
### CAUTION

The internal sleeves of the Biolog Option 28 heads size XL may not completely cover the 12/14 EuroCone taper. This may cause slight increase in wear of the Double Mobility Liner.

Lightly impact the Double Mobility Liner and the femoral head assembly using the multifunction impactor assembled to the acetabular shell correction impactor.



When using a stem with the head in situ or a monobloc stem: use the specific double mobility liner terminal and stem neck terminal with the double mobility compression tool to insert the liner.



Reduce the hip and verify the Double Mobility Liner's mobility in the Mpace DM Acetabular shell.

### CAUTION

During the final reduction with the final Double Mobility Liner, take care not to damage its external spherical surface.

## 7. INSTRUMENT DETAILS

### 7.1 IMPACTOR HANDLE (REF. 01.32.10.1070) DISASSEMBLY FOR CLEANING AND STERILIZATION

**Step 1:** Remove the anvil from the handle by pushing the button.



**Step 2:** Remove the central rod.



### 7.2 IMPACTOR HANDLE (REF. 01.32.10.1070) ASSEMBLY

**Step 1:** Insert the rod.
















**Step 2:** Connect the anvil.



## 8. IMPLANT NOMENCLATURE

### MPACT DM ACETABULAR SHELL

DIAMETER (MM)	REF.	LINER SIZES	COLOR CODE
42	01.32.142MB	DMA	
44	01.32.144MB	DMB	
46	01.32.146MB	DMC	
48	01.32.148MB	DMD	
50	01.32.150MB	DME	
52	01.32.152MB	DMF	
54	01.32.154MB	DMG	
56	01.32.156MB	DMH	
58	01.32.158MB	DMI	
60	01.32.160MB	DML	
62	01.32.162MB	DMM	
64	01.32.164MB	DMN	
66	01.32.166MB	DMN	

### UHMWPE HC LINER (HIGHCROSS)

LINER SIZES	HEAD Ø 22.2	HEAD Ø 28
DMA	01.26.2242MHC	
DMB	01.26.2244MHC	
DMC	01.26.2246MHC	
DMD	01.26.2248MHC	01.26.2848MHC
DME	01.26.2250MHC	01.26.2850MHC
DMF	01.26.2252MHC	01.26.2852MHC
DMG	01.26.2254MHC	01.26.2854MHC
DMH	01.26.2256MHC	01.26.2856MHC
DMI	01.26.2258MHC	01.26.2858MHC
DML	01.26.2260MHC	01.26.2860MHC
DMM	01.26.2262MHC	01.26.2862MHC
DMN	01.26.2264MHC	01.26.2864MHC

Part numbers subject to change.

## NOTE FOR STERILIZATION

The instruments are not sterile upon delivery. Instruments must be cleaned before use and sterilized in an autoclave respecting the US regulations, directives where applicable, and following the manufactures instructions for use of the autoclave. For detailed instructions please refer to the document "Recommendations for cleaning decontamination and sterilization of Medacta International reusable orthopaedic devices" available at [www.medacta.com](http://www.medacta.com).







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